

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY

2102-F-21-R-48

Name: Spring Lake **County(ies):** Walworth

Legal Description: T122, 123N-R74, 75W-Sec. 6, 25, 26, 30, 31

GPS: 45°25'51.84"N 99°49'53.80"W

Location from nearest town: 4 miles south and 1 mile east of Java

Date of present survey: June 22-24, 2015 (netting)

Date of last survey: July 1-3, 2013 (netting)

Most recent lake management plan: None

Management classification: Warm-water marginal

Primary Game Species	Secondary and Other Species
Walleye	White Sucker
Yellow Perch	Black Crappie
Black Bullhead	Fathead Minnow

PHYSICAL DATA

Surface Area: 720 acres

Watershed: 11,840 acres

Maximum Depth: 9 feet

Mean Depth: 6 feet

Lake elevation at time of survey (field observations): Full

Contour map: No

Date: NA

Ownership of lake and adjacent lakeshore properties:

Pasture and grassland with a few shrubs and trees surround Spring Lake. The ownership of the shoreline is split three ways. Approximately 1/3 is Federal Waterfowl Production Area, 1/3 is State Game Production Area, and the remaining is private land.

Watershed condition with percentages of land use types:

Slopes vary from gentle to rolling and are covered with native and tame grasses. Approximately 70% is cropland and 30% is pasture, hayland and wildlife production area.

Fishing access:

Fishing access is located in several locations around the lake. On the west side there is an access trail to a point that is used to launch small boats, although care needs to be taken as to not get stuck in the sand. There is also good fishing access on the north end along the highway and in the southeast corner of the lake. The shoreline is walkable and fishable around the entire lake and most of the shoreline is public land.

Condition of all structures (i.e. spillway, boat ramps, level regulators, etc.):

Spring Lake is a natural lake with no development present on its shoreline. Boats are able to launch, with care, on a hard sandy shoreline located on the west, State Game Production Area.

Field observations of aquatic vegetation condition:

A little submergent vegetation was present at the time of the survey and consisted of mainly sago pondweed. Emergent vegetation consisted of mainly rushes that are starting to grow around most of the shoreline.

CHEMICAL DATA**Field observations of water quality and pollution problems:**

No pollution problems were evident at the time of the survey. Water clarity was fair with a secchi disc reading of 2 feet. Other water quality characteristics were measured in the field on June 23, 2015, using a HACH water quality kit and a Hanna multiparameter meter. Results are found in Table 1.

Presence of a thermocline and depth from surface: No

Station for water chemistry located on attached map: Yes

Table 1. Water chemistry results from Spring Lake, Walworth County, June 23, 2015.

Station	Depth (ft)	Temp (F)	DO (ppm)	CO2 (ppm)	ALK (mg/L)	HRD (mg/L)	pH	Cond. (μS/cm)	TDS (ppm)	Sal.	ORP	Secchi (ft)
A	Surface	72.7	8.13	30.4	456	954	8.68	2235	1117	1.14	-183.6	2.0
A	7.8	73.3	5.51	30.0	493	852	8.68	2213	1106	1.13	-187.3	

BIOLOGICAL DATA**Methods:**

Spring Lake was sampled on June 22-24, 2015, with ten overnight trap net sets. The trap nets have 3ft x 5ft frames, 60ft leads, and ¾ inch knotted mesh. Two experimental gill nets were also set. The gill nets are 150ft x 6ft with 25ft panels of ½, ¾, 1, 1-1/4, 1-1/2, and 2 inch monofilament mesh. No electrofishing was done during this survey period. Fish indices and statistics were completed using Winfin.

Results and Discussion:

Trap Net Catch

Table 2. Total catch of ten, overnight $\frac{3}{4}$ -inch frame nets at Spring Lake, Walworth County, July 1-3, 2013.

Species	#	%	CPUE	80% C.I.	Mean CPUE*	PSD	RSD-P	Mean Wr
Walleye	147	94.8	14.7	± 5.1	19.1	100	0	80
Yellow Perch	5	3.3	0.5	± 0.3	0.3	100	80	96
Black Bullhead	3	1.9	0.3	± 0.2	25.4	67	0	104

* Four year mean (2001, 2003, 2011, 2013)

Gill net catch

Table 3. Total catch of two, 150ft experimental gill nets at Spring Lake, Walworth County, July 1-3, 2013

Species	#	%	CPUE	80% C.I.	Mean CPUE*	PSD	RSD-P	Mean Wr
Walleye	138	100	69.0	± 12.3	46.4	100	0	88

* Four year mean (2001, 2003, 2011, 2013)

Fish Populations

Spring Lake continues to contain a quality walleye population. The gill net CPUE of 69 fish is below the 81.5 from the 2013 survey (Table 6) but above the 46.4 four year mean (Table 3). The trap net CPUE of 14.7 is well below the 62.8 from the 2013 survey (Table 6) but only slightly below the 19.1 four year mean (Table 2). This population is dominated by two year classes of fish as can be seen in Figure 1. Figures 1 and 2 illustrate the length frequency histograms for the fish sampled the last two surveys. These two year classes are a result of stockings that have been done in 2011 and 2014. Growth is great with means above statewide, regional and SLI means (Table 4). This also shows that the population is comprised of two year classes that coincide with the stockings. Condition is fine with a mean Wr of 84. The walleyes in Spring Lake make for a popular fishery in the area and stockings will continue to be made on an every other year basis to maintain this fishery as long as water levels allow.

A couple yellow perch and black bullheads were the only other species sampled this survey. Neither species was sampled in enough numbers to make any inferences about their populations. Yellow perch will continue to be stocked to try and establish a self-sustaining population. Black crappie, white sucker and northern pike were the species not sampled that have been in surveys past (Table 6).

Table 4. Average back-calculated lengths (mm) for each age class of walleye sampled from Spring Lake, Walworth County, 2015.

Year Class	Age	N	Back-calculated Age			
			1	2	3	4
2014	1	41	157			
2011	4	97	239	379	421	439
All Classes		138	198	379	421	439
Statewide Mean			168	279	360	425
Region II Mean			169	282	346	408
SLI* Mean			176	271	384	431

* Small Lakes and Impoundments

Figure 1. Length frequency histogram for walleye sampled from Spring Lake, Walworth County, 2015.

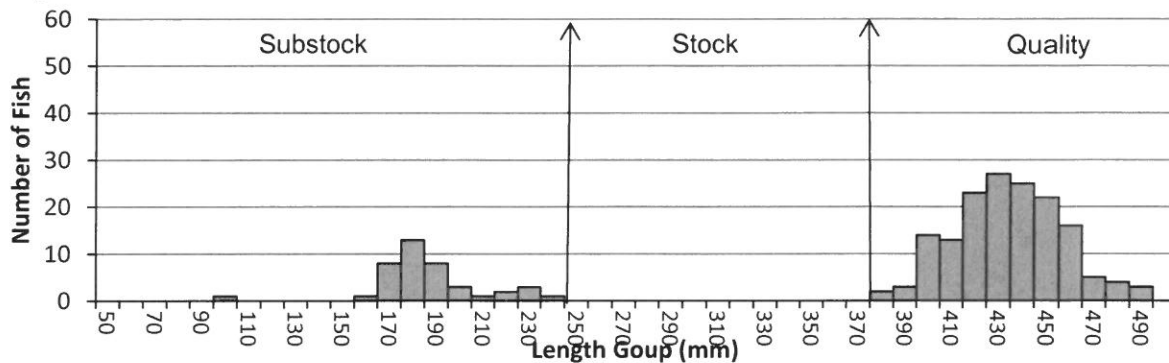


Figure 2. Length frequency histogram for walleye sampled from Spring Lake, Walworth County, 2013.

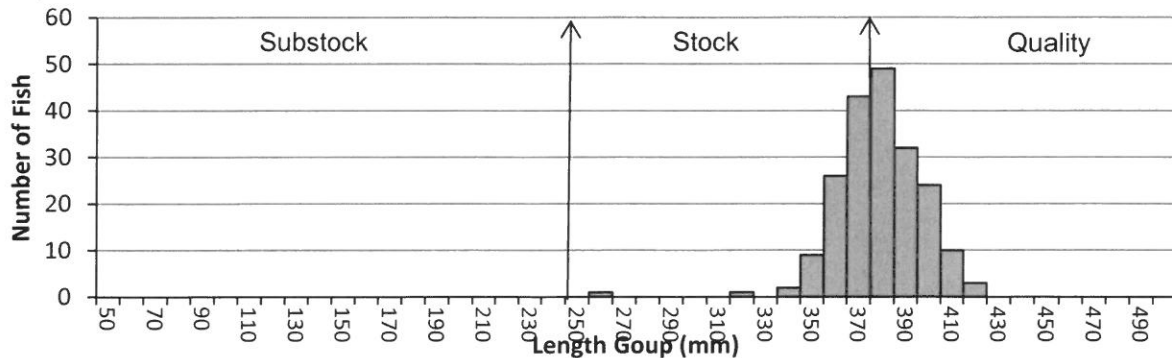


Table 5. Stocking records for Spring Lake, Walworth County.

Year	Number	Species	Size
2000	560	Yellow Perch	Adult
2000	465	Yellow Perch	Adult
2000	180	Black Crappie	Adult
2000	720,000	Walleye	Fry
2001	720,000	Walleye	Fry
2011	78,000	Walleye	Small Fingerling
2012	300	Yellow Perch	Adult
2014	750,000	Walleye	Fry
2015	6,600	Yellow Perch	Fingerling

RECOMMENDATIONS

1. Resurvey with trap and gill nets in 2018 to monitor the fish populations.
2. Continue to monitor the water levels in the lake and make stockings if necessary. If the water levels remain high, Spring Lake could use a supplemental stocking of yellow perch.
3. Continue to stock walleye fry or fingerlings on an every other year basis as water level permit.

Table 6. Gill net (GN) and trap net (TN) CPUE for all fish species sampled in Spring Lake since surveys started.

Species	1972	2001	2003	2011	2013	2015
Black Bullhead (GN)	--	4.0	2.5	--	--	--
Black Bullhead (TN)	--	78.3	22.2	--	1.0	0.3
Black Crappie (GN)	--	--	--	--	--	--
Black Crappie (TN)	--	--	0.4	--	--	--
Yellow Perch (GN)	--	11.5	2.0	--	--	--
Yellow Perch (TN)	--	0.4	0.6	--	0.1	0.5
Northern Pike (GN)	--	--	0.5	--	--	--
Northern Pike (TN)	--	--	0.1	0.7	--	--
White Sucker (GN)	--	--	--	--	--	--
White Sucker (TN)	--	0.4	--	--	--	--
Walleye (GN)	--	55.0	49.0	--	81.5	69.0
Walleye (TN)	--	2.9	10.7	--	62.8	14.7